

**Amendment**

Date filed April 3, 2006

U.S. Patent Application Serial No. **09/787,614**

**AMENDMENTS TO THE CLAIMS:**

Please amend claims 1, 3-5, 8-9, 11 and 19, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

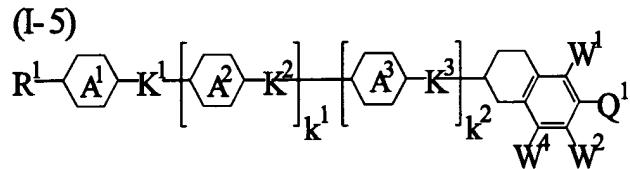
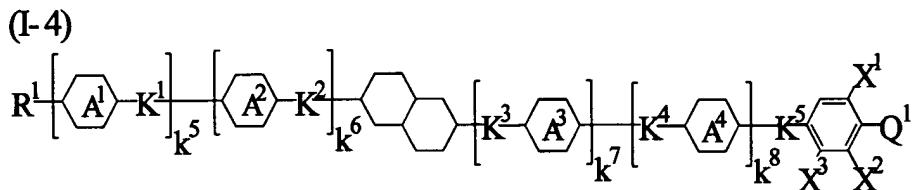
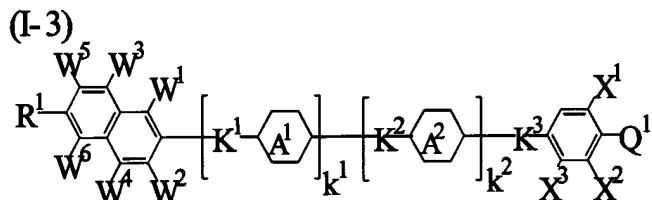
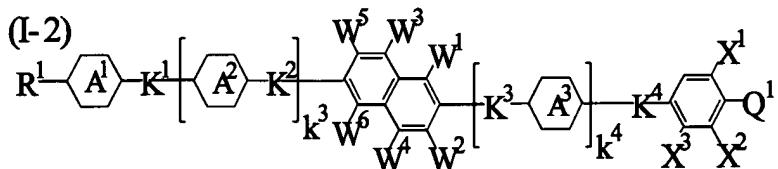
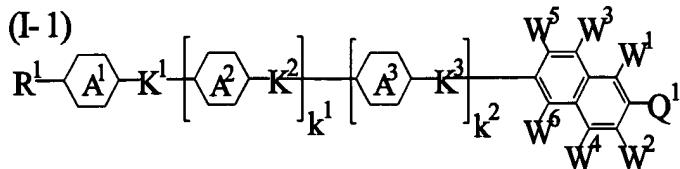
**Listing of Claims:**

**Claim 1 (Currently Amended):** A nematic liquid crystal composition comprising a liquid crystal component A composed of two or more kinds of compounds represented by two or three or more general formulas selected from the general formulas (I-1) to (I-5):

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(wherein one, or two or more CH groups, which are present in a naphthalene-2,6-diyl ring, may be substituted with a N group,

one, or two or more  $-\text{CH}_2-$  groups, which are present in a decahydronaphthalene-2,6-diyl ring, may be substituted with  $-\text{CF}_2-$ , one, or two or more  $-\text{CH}_2-\text{CH}_2-$  groups, which are present in said ring, may be substituted with  $-\text{CH}_2\text{O}-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{CH}=\text{CF}-$ ,  $-\text{CF}=\text{CF}-$ ,  $-\text{CH}=\text{N}-$  or  $-\text{CF}=\text{N}-$ , one, or two or more  $>\text{CH}-\text{CH}_2-$  groups, which are present in said ring, may be substituted with  $>\text{CH}-\text{O}-$ ,  $>\text{C}=\text{CH}-$ ,  $>\text{C}=\text{CF}-$ ,  $>\text{C}=\text{N}-$  or  $>\text{N}-\text{CH}_2-$ , a  $>\text{CH}-\text{CH}<$  group, which is present in the ring,

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may be substituted with >CH-CF<, >CF-CF< or >C=C<, and at least one C in said non-substituted or substituted ring may be substituted with Si;

R<sup>1</sup> each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH<sub>3</sub> or CF<sub>3</sub> as a non-substituent or substituent group, and one, or two or more CH<sub>2</sub> group, which are present in said alkyl or alkenyl group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q<sup>1</sup> each independently represents F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, OCF<sub>2</sub>H, OCFH<sub>2</sub>, or NCS;

X<sup>1</sup> to X<sup>3</sup> X<sup>2</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN; X<sup>3</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, CN, or CH<sub>3</sub>;

W<sup>1</sup> to W<sup>6</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and also W<sup>4</sup> each independently represents CH<sub>3</sub>;

K<sup>1</sup> to K<sup>5</sup> each independently represents, a single bond, -COO-, -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -CH=CH-, -CF=CF-, -C≡C-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-;

rings A<sup>1</sup> to A<sup>4</sup> each independently represents 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, 3,5-dichloro-1,4-phenylene, pyrimidine-2,5-diyl, trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or

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decahydronaphthalene-2,6-diyl, and naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl

can have one, or two or more F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$  or  $\text{CH}_3$  as a non-substituent or substituent group;

one, or two or more hydrogen atoms, which are present in a naphthalene-2,6-diyl ring, a

1,2,3,4-tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-2,6-diyl ring, a side chain group

$\text{R}^1$ , a polar group  $\text{Q}^1$ , linking groups  $\text{K}^1$  to  $\text{K}^5$  and rings  $\text{A}^1$  to  $\text{A}^4$ , may be substituted with a

deuterium atom;

$\text{k}^1$  to  $\text{k}^8$  each independently represents 0 or 1,  $\text{k}^3 + \text{k}^4$  is 0 or 1, and  $\text{k}^5 + \text{k}^6 + \text{k}^7 + \text{k}^8$  is 0, 1

or 2; and

atoms, which constitute the compounds of the general formulas (I-1) to (I-5), may be substituted with isotope atoms thereof); 0 to 99.9% by weight of a liquid crystal component B composed of a compound having a dielectric constant anisotropy of +2 or more as a liquid crystal component excluding the compounds of the general formulas (I-1) to (I-5); and 0 to 85% by weight of a liquid crystal component C composed of a compound having a dielectric constant anisotropy within a range from -10 to +2; the sum total of said liquid crystal component B and said liquid crystal component C being within a range from 0 to 99.9% by weight.

**Claim 2 (Original):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A satisfies at least one of the following conditions:

(i) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of

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compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(ii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(iii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(iv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(v) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of

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compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(vi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(vii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(viii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(ix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of

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compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(x) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

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(xiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of

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compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the

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content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5),

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the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxiv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxv) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or

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two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxvi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4) and one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 10 to 100% by weight;

(xxvii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-1), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxviii) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-2), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

(xxix) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-3), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight;

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(xxx) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-4), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight; and

(xxxi) said liquid crystal component A contains one, or two or more kinds of compounds selected from compounds represented by the general formula (I-5), the content of said selected compounds in said liquid crystal component A being within a range from 5 to 100% by weight.

**Claim 3 (Currently Amended):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (1-ai) to (1- avii), the content of said compounds being within a range from 10 to 100% by weight:

(I-ai) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms,

(I-aii) compound in which Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, OCF<sub>2</sub>H, or CN,

(I-aiii) compound in which K<sup>1</sup> to K<sup>5</sup> represent single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-,

(I-av) compound in which rings A<sup>1</sup> to A<sup>4</sup> represent trans-1,4- cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5- difluoro-1,4-phenylene, and

(I-av) compound in which one, or two or more hydrogen atoms, which are present in naphthalene-2,6-diyl ring, a 1,2,3,4- tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene- 2,6-diyl ring, a side chain group R<sup>1</sup>, a polar group Q<sup>1</sup>, linking groups K<sup>1</sup> to K<sup>5</sup> and rings A<sup>1</sup> to A<sup>4</sup>, are substituted with deuterium atoms, in the general formulas (I-1) to (I-5);

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(I-avi) compound in which W<sup>1</sup> to W<sup>3</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub> in the general formulas (I-1) to (I-3) and (I-5); and

(I-avii) compound in which X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub> in the general formulas (I-2) to (I-4) .

**Claim 4 (Currently Amended):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component A contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (I-bi) to (I-bvii) (I-bxi), the content of said compounds being within a range from 5 to 100% by weight:

(I-bi) compound in which k<sup>1</sup>=k<sup>2</sup>=0, the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K<sup>1</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, and

(I-bii) compound in which k<sup>1</sup>=1, k<sup>2</sup>=0, rings A<sup>1</sup> and A<sup>2</sup> represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K<sup>1</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, K<sup>1</sup> and K<sup>2</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, in the general formula (I-1) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and W<sup>1</sup> to W<sup>3</sup> each represents H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-biii) compound in which k<sup>3</sup>=k<sup>4</sup>=0, the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, and K<sup>1</sup> and K<sup>4</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-,

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-COO-, or -C≡C-, in the general formula (I-2) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>, and W<sup>1</sup> to W<sup>3</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-biv) compound in which k<sup>1</sup>=k<sup>2</sup>=0, K<sup>3</sup> is a single bond, -COO-, or -C≡C-, and

(I-bv) compound in which k<sup>1</sup>=1, k<sup>2</sup>=0, the ring A<sup>1</sup> is 1,4-phenylene, 3-fluoro-1,4-phenylene, or a 3,5-difluoro-1,4-phenylene, K<sup>1</sup> and K<sup>3</sup> represent single bond, -COO- or -C≡C-, in the general formula (I-3) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>, and W<sup>1</sup> to W<sup>3</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>;

(I-bvi) compound in which k<sup>5</sup>=k<sup>6</sup>=k<sup>7</sup>=k<sup>8</sup>=0, K<sup>5</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -COO-, or -C≡C-,

(I-bvii) compound in which k<sup>5</sup>=1, k<sup>6</sup>=k<sup>7</sup>=k<sup>8</sup>=0, the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K<sup>1</sup> and K<sup>5</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-,

(I-bviii) compound in which k<sup>7</sup>=1, k<sup>5</sup>=k<sup>6</sup>=k<sup>8</sup>=0, the ring A<sup>3</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, or 3,5-difluoro-1,4-phenylene, K<sup>3</sup> and K<sup>5</sup> represent a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, and

(I-bix) compound in which the decahydronaphthalene-2,6-diyi ring has at least one substituent among substituents -CF<sub>2</sub>-, -CH<sub>2</sub>-O-, -CH=CH-, -CH=CF-, -CF=CF-, -CH=N-, -CF=N-, >CH-O-, >C=CH-, >C=CF-, >C=N-, >N-CH<sub>2</sub>-, >CH-CF<, >CF-CF<, >C=C<, and Si, in the general formula

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(I-4) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and X<sup>1</sup> and X<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>; and

(I-bx) compound in which k<sup>1</sup>=k<sup>2</sup>=0, the ring A<sup>1</sup> is trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, K<sup>1</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, or -COO-, and

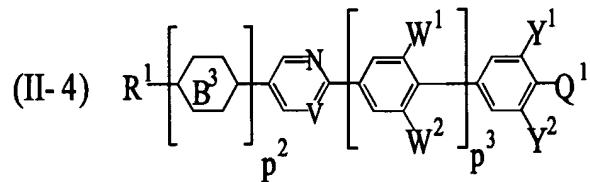
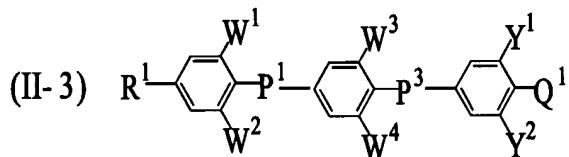
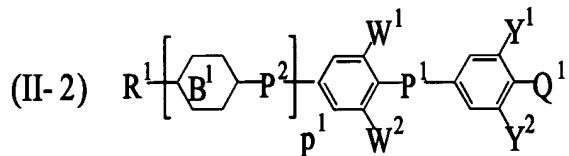
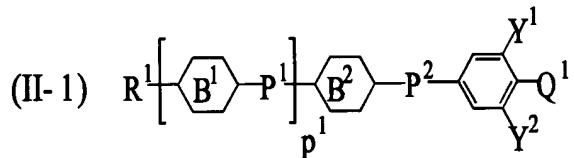
(I-bxi) compound in which k<sup>1</sup>=1, k<sup>2</sup>=0, rings A<sup>1</sup> and A<sup>2</sup> represent trans-1,4-cyclohexylene, 1,4-phenylene, 3-fluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and K<sup>1</sup> and K<sup>2</sup> each represents a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, or -COO-, in the general formula (I-5) in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and W<sup>1</sup> and W<sup>2</sup> represent H, F, Cl, CF<sub>3</sub>, or OCF<sub>3</sub>.

**Claim 5 (Currently Amended):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component B contains one, or two or more kinds of compounds selected from the group of compounds represented by the general formulas (II-1) to (II-4) :

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(wherein  $R$  and  $R^1$  each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN,  $\text{CH}_3$  or  $\text{CF}_3$  as a non-substituent or substituent group, and one, or two or more  $\text{CH}_2$  group, which

are present in said alkyl or alkenyl group, may be substituted with O, CO or  $\text{COO}$ , while O atoms do not bond with each other directly;

$Q^1$  each independently represents F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ ,  $\text{OCF}_2\text{H}$ ,  $\text{OCFH}_2$ , NCS, or CN;

$W^1$  to  $W^4$  each independently represents H, F, Cl,  $\text{CF}_3$ ,  $\text{OCF}_3$ , or CN, and also  $W^4$  each independently represents  $\text{CH}_3$ ;

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Y<sup>1</sup> and Y<sup>2</sup> each independently represents H, F, Cl, EF<sub>3</sub>, or OCF<sub>3</sub>, ~~or~~ CN;

V represents CH or N;

p<sup>1</sup> to p<sup>3</sup> each independently represents, a single bond, -COO-, -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, - (CH<sub>2</sub>)<sub>2</sub>-,

- (CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, =CH=N-N=CH-, or -N(O)=N-, and

p<sup>1</sup> and p<sup>3</sup> each independently represents -CH=CH-, -CF=CF-, or C ≡C-;

rings B<sup>1</sup> to B<sup>3</sup> each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, or trans-4-sila-1,4-cyclohexylene, and the ring B<sup>3</sup> may also be 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 3, 5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2, 3-dichloro-1,4-phenylene, or 3,5- dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in a side chain group R<sup>1</sup>, a polar group Q<sup>1</sup>, linking groups P<sup>1</sup> to P<sup>3</sup> and rings B<sup>1</sup> to B<sup>3</sup>, may be substituted with a deuterium atom;

p<sup>1</sup> to p<sup>3</sup> each independently represents 0 or 1, and p<sup>2</sup> + p<sup>3</sup> is 0 or 1; and

atoms, which constitute the compounds of the general formulas (II-1) to (II-4), may be substituted with isotope atoms thereof) .

**Claim 6 (Original):** A hematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty knids of compounds selected from one, two,

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or three or more sub-groups among the following sub-groups (II-ai) to (II-zxii), the content of said compounds being within a range from 10 to 100% by weight:

(II-ai) compounds in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, in the general formulas (II-1) to (II-4);

(II-aii) compounds in which Q<sup>1</sup> is F, Cl, or -OCF<sub>3</sub>, in the general formulas (II-1) to (II-4);

(II-aiii) compounds in which P<sup>2</sup> is -(CH<sub>2</sub>)<sub>2</sub>- or -(CH<sub>2</sub>)<sub>4</sub>-, in the general formula (II-1);

(II-aiv) compound in which p<sup>1</sup> is 1, in the general formula (II-1);

(II-av) compound in which at least one of Y<sup>1</sup>, Y<sup>2</sup>, W<sup>1</sup> and W<sup>2</sup> is F, in the general formula (II-2);

(II-avi) compound in which p<sup>1</sup> is 1 and P<sup>1</sup> is -C≡C-, in the general formula (II-2);

(II-avii) compound in which P<sup>2</sup> is a single bond or -(CH<sub>2</sub>)<sub>2</sub>- and P<sup>1</sup> is -COO-, in the general formula (II-2);

(II-aviii) compound in which at least one of Y<sup>1</sup>, Y<sup>2</sup>, and W<sup>1</sup> to W<sup>4</sup> is F, in the general formula (II-3);

(II-aix) compound in which P<sup>3</sup> is -C≡C-, in the general formula (II-3);

(II-ax) compound in which P<sup>1</sup> is a single bond or -C≡C- and P<sup>3</sup> is -COO-, in the general formula (II-3);

(II-axi) compound represented by the general formula (II-4); and

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(II-axii) compound in which at least one of rings B<sup>1</sup> to B<sup>3</sup> is substituted with a deuterium atom if the rings B<sup>1</sup> to B<sup>3</sup> represent trans-1,4-cyclohexylene, in the general formulas (II-1), (II-2) and (II-4).

**Claim 7 (Original):** A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-bi) to (II-bviii), the content of said compounds being within a range from 10 to 100% by weight:

(II-bi) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 0, and Q<sup>1</sup> is -CN, in the general formula (II-1);

(II-bii) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 1, Q<sup>1</sup> is F or -CN, and Y1 and Y2 represent H or F, in the general formula (II-1);

(II-biii) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 0, Q<sup>1</sup> is -CN, and Y<sup>1</sup>, Y<sup>2</sup>, W<sup>1</sup> and W<sup>2</sup> represent H or F, in the general formula (II-2);

(II-biv) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 1, P<sup>2</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>- or -COO-, P<sup>1</sup> is a single bond, -COO-, or -C≡C-, Q<sup>1</sup> is F or -CN, and Y<sup>1</sup>, Y<sup>2</sup>, W<sup>1</sup> and W<sup>2</sup> represent H or F, in the general formula (II-2);

(II-bv) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, and one of P<sup>1</sup> and P<sup>3</sup> is a single bond and other one is a single bond, -COO-, or -C≡C-, in the general formula (II-3);

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(II-bvi) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, and Y<sup>1</sup>, Y<sup>2</sup> and W<sup>1</sup> to W<sup>4</sup> represent H or F, in the general formula (II-3);

(II-bvii) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 7 carbon atoms, and p<sup>2</sup>+p<sup>3</sup>=0, in the general formula (II-4); and

(II-bviii) compounds of the general formulas (II-1) to (II-2) in which at least one hydrogen atom of rings B<sup>1</sup> and B<sup>2</sup> is substituted with a deuterium atom if rings B<sup>1</sup> and B<sup>2</sup> represent trans-1,4-cyclohexylene.

**Claim 8 (Currently Amended):** A nematic liquid crystal composition according to claim 5, wherein said liquid crystal component B contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (II-ci) to (II-civ), the content of said compounds being within a range from 10 to 100% by weight:

(II-ci) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 1, one of P<sup>1</sup> and P<sup>2</sup> is a single bond and other one is a single bond, -COO-, -(CH<sub>2</sub>)<sub>2</sub>-, or -(CH<sub>2</sub>)<sub>4</sub>, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or OCF<sub>2</sub>H, and one, or two or more of Y<sup>1</sup> and Y<sup>2</sup> represent F, in the general formula (II-2) (II-1);

(II-cii) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, p<sup>1</sup> is 1, P<sup>2</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, or -COO-, P<sup>1</sup> is a single bond, -COO-, or -C≡C-, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or OCF<sub>2</sub>H, one, or two or more of Y<sup>1</sup> and Y<sup>2</sup> represent F, and W<sup>1</sup> and W<sup>2</sup> represent H or F, in the general formula (II-2);

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(II-ciii) compound in which R<sup>1</sup> is an alkyl or alkenyl group having 2 to 5 carbon atoms, one of P<sup>1</sup> and P<sup>3</sup> is a single bond and the other one is a single bond, -COO-, or -C≡C-, Q<sup>1</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or OCF<sub>2</sub>H, one, or two or more of Y<sup>1</sup> and Y<sup>2</sup> represent F, and W<sup>1</sup> to W<sup>4</sup> represent H or at least one of them is F, in the general formula (II-3); and

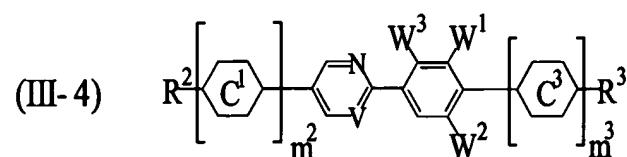
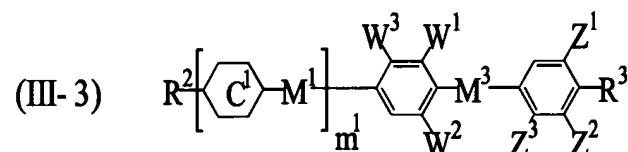
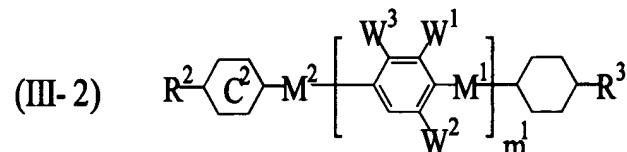
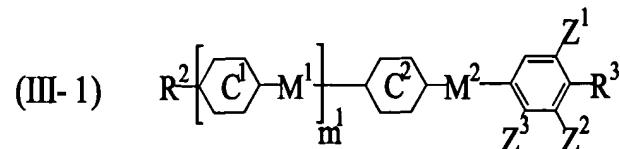
(II-civ) compound of the general formulas (II-1) and (II-2) in which at least three hydrogen atoms of rings B<sup>1</sup> and B<sup>2</sup> are substituted with a deuterium atom if rings B<sup>1</sup> and B<sup>2</sup> represent trans-1,4-cyclohexylene.

**Claim 9 (Currently Amended):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal component C contains compounds selected from the group of compounds represented by the general formulas (III-1) to (III-4) :

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(wherein W<sup>1</sup> to W<sup>3</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN;

V represents CH or N;

R<sup>2</sup> and R<sup>3</sup> each independently represents an alkyl or alkoxy group having 1 to 10 carbon atoms or an alkenyl or alkenyloxy group having 2 to 10 carbon atoms, said alkyl, alkoxy, alkenyl or alkenyloxy group can have one, or two or more F, Cl, CN, CH<sub>3</sub> or CF<sub>3</sub> as a non-substituent or substituent group, and one, or two or more CH<sub>2</sub> group, which are present in said alkyl, alkoxy, alkenyl or alkenyloxy group, may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

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$Z^1$  to  $Z^3$  each independently represents H, F, Cl,  $CF_3$ ,  $OCF_3$ , or CN, and  $Z^3$  each independently represents  $-CH_3$ ;

$M^1$  to  $M^3$  each independently represents, a single bond,  $-COO-$ ,  $-OCO-$ ,  $-CH_2O-$ ,  $-OCH_2-$ ,  $-(CH_2)_2-$ ,  $-(CH_2)_4-$ ,  $-CH=CH-(CH_2)_2-$ ,  $-(CH_2)_2-CH=CH-$ ,  $-CH=N-$ ,  $=CH=N-N=CH-$ , or  $-N(O)=N-$ , and  $M^1$  and  $M^3$  each independently represents  $-CH=CH-$ ,  $-CF=CF-$ , or  $C\equiv C-$ ;

rings  $C^1$  to  $C^3$  each independently represents trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane- 2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4- tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, naphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene- 2,6-diyl can have one, or two or more F, Cl,  $CF_3$ ,  $OCF_3$  or  $CH_3$  as a non-substituent or substituent group, and rings  $C^1$  and  $C^3$  may also be 1,4-phenylene, 2- or 3-fluoro-1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3- dichloro-1,4-phenylene, or 3,5-dichloro-1,4-phenylene;

one, or two or more hydrogen atoms, which are present in side chain groups  $R^2$  and  $R^3$ , linking groups  $M^1$  to  $M^3$  and rings  $C^1$  to  $C^3$ , may be substituted with a deuterium atom;

$m^1$  to  $m^3$  each independently represents 0 or 1, and  $m^2 + m^3$  is 0 or 1; and atoms, which constitute the compounds of the general formulas (III-1) to (III-4), may be substituted with isotope atoms thereof).

**Claim 10 (Original):** A nematic liquid crystal composition according to claim 9, wherein

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said liquid crystal component C satisfies at least one of the following conditions:

- (i) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;
- (ii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;
- (iii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;
- (iv) said liquid crystal component C contains one, or two or more kinds of compounds selected from the compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;
- (v) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;
- (vi) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds

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of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(vii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(viii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(ix) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(x) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds

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of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xi) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiii) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the

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content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xiv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight;

(xv) said liquid crystal component C contains one, or two or more kinds of compounds selected from compounds represented by the general formula (III-1), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-2), one, or two or more kinds of compounds selected from compounds represented by the general formula (III-3) and one, or two or more kinds of compounds selected from compounds represented by the general formula (III-4), the content of said selected compounds in said liquid crystal component C being within a range from 5 to 100% by weight.

**Claim 11 (Currently Amended):** A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-ai) to (III-axii), the content of said compounds being within a range from 10 to 100% by weight:

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(III-ai) compounds in which R<sup>2</sup> is an alkenyl group having 2 to 5 carbon atoms, in the general formulas (III-1) to (III-4);

(III-aii) compounds in which R<sup>3</sup> is a straight-chain alkenyl or alkenyloxy group having 2 to 7 carbon atoms, in the general formula (III-1) to (III-4);

(III-aiii) compounds in which m<sup>1</sup> is 0 and M<sup>2</sup> is a single bond or -(CH<sub>2</sub>)<sub>2</sub>-, in the general formula (III-1);

(III-aiv) compound in which m<sup>1</sup> is 1, in the general formula (III-1);

(III-av) compound represented by the general formula (III-2);

(III-avi) compound in which at least one of Z<sup>1</sup>, Z<sup>2</sup> and W<sup>1</sup> to W<sup>3</sup> is F, in the general formula (III-3);

(III-avii) compound in which Z<sup>3</sup> is F or -CH<sub>3</sub>, in the general formula (III-3);

(III-aviii) compound in which m<sup>1</sup> is 0 and M<sup>3</sup> is a single bond, in the general formula (III-3);

(III-aix) compound in which m<sup>1</sup> is 1, M<sup>1</sup> is a single bond, -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, -CH=N-N=CH-, -N(O)=N-, -CH=CH-, or -CF=CF-, in the general formula (III-3);

(III-ax) compound in which M<sup>1</sup> is COO- or -C≡C- and M<sup>3</sup> is -OCO-, -CH<sub>2</sub>O-, -OCH<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, -CH=N-N=CH-, -N(O)=N-, -CH=CH-, -CF=CF-, or -C≡C-, in the general formula (III-3);

(III-axi) compound represented by the general formula (III-4); and

(III-axii) compounds in which at least one hydrogen atom of rings C<sup>1</sup> to C<sup>3</sup> is substituted with a deuterium atom if rings C<sup>1</sup> to C<sup>3</sup> represent trans-1,4-cyclohexylene, in the general formulas (III-1)

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to (III-4).

**Claim 12 (Original):** A nematic liquid crystal composition according to claim 9, wherein said liquid crystal component C contains one to twenty kinds of compounds selected from one, two, or three or more sub-groups among the following sub-groups (III-bi) to (III-bix), the content of said compounds being within a range from 10 to 100% by weight:

(III-bi) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m<sup>1</sup> is 0, and M<sup>2</sup> is a single bond, -COO-, or -(CH<sub>2</sub>)<sub>2</sub>, in the general formula (III-1);

(III-bii) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m<sup>1</sup> is 1, the ring C<sup>1</sup> is trans-1,4-cyclohexylene, and one of M<sup>1</sup> and M<sup>2</sup> is a single bond and other one is a single bond, -COO-, or a -(CH<sub>2</sub>)<sub>2</sub>-, in the general formula (III-1);

(III-biii) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring C<sup>2</sup> is trans-1,4-cyclohexylene or trans-1,4-cyclohexenylene, m<sup>1</sup> is 0, and M<sup>2</sup> is a single bond, -COO-, or -(CH<sub>2</sub>)<sub>2</sub>-, in the general formula (III-2);

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(III-biv) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, the ring C<sup>2</sup> is trans-1,4-cyclohexylene or trans-1,4-cyclohexenylene, m<sup>1</sup> is 1, and one of M<sup>1</sup> and M<sup>2</sup> is a single bond, in the general formula (III-2);

(III-bv) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m<sup>1</sup> is 0, and M<sup>3</sup> is a single bond, -C≡C-, or -CH=N-N=CH-, in the general formula (III-3);

(III-bvi) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m<sup>1</sup> is 1, M<sup>1</sup> is a single bond, -(CH<sub>2</sub>)<sub>2</sub>-, -COO-, or -C≡C-, and M<sup>2</sup> is a single bond, -COO-, or -C≡C-, in the general formula (III-3);

(III-bvii) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, m<sup>1</sup> is 1, one of M<sup>1</sup> and M<sup>3</sup> is a single bond and other one is a single bond or -C≡C-, and at least one of W<sup>1</sup> and W<sup>2</sup> is F, in the general formula (III-3);

(III-bviii) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkoxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and any one of Z<sup>2</sup> and Z<sup>3</sup> is substituted with F or CH<sub>3</sub>, in the general formula (III-3); and

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(III-bix) compound in which R<sup>2</sup> is an alkyl group having 1 to 5 carbon atoms or an alkenyl group having 2 to 5 carbon atoms, R<sup>3</sup> is an alkyl or alkyloxy group having 1 to 5 carbon atoms, or an alkenyl or alkenyloxy group having 2 to 5 carbon atoms, and m<sup>2</sup>+m<sup>3</sup>=0, in the general formula (III-4).

**Claim 13 (Previously Presented):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition contains one, or two or more kinds of core-structure compounds which have four six-membered rings and a liquid crystal phase- isotropic liquid phase transition temperature of 100°C or higher.

**Claim 14 (Previously Presented):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition has a dielectric constant anisotropy within a range from 2 to 40, a birefringent index within a range from 0.02 to 0.40, a nematic phase-isotropic liquid phase transfer temperature within a range from 50 to 180°C or higher, and a crystal phase-, smectic phase- or glass phase-nematic phase transfer temperature within a range from -200 to 0°C.

**Claim 15 (Previously Presented):** A nematic liquid crystal composition according to claim 1, wherein said liquid crystal composition contains a compound having an optically active group capable of securing an induced helical pitch within a range from 0.5 to 1000μm.

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**Claim 16 (Previously Presented):** An active matrix, twisted nematic or super twisted nematic liquid display device using the nematic liquid crystal composition of claim 1.

**Claim 17 (Previously Presented):** A light scattering type liquid display device comprising a light modulation layer which contains the liquid crystal composition of claim 1 and a transparent solid substance.

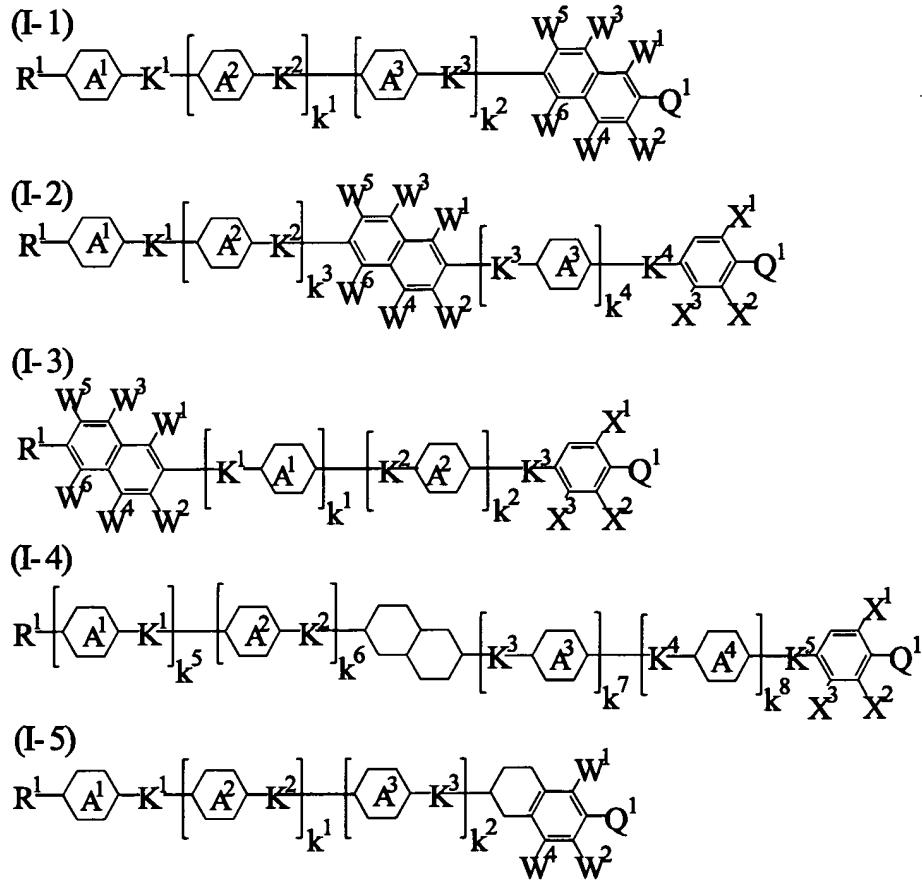
**Claim 18 (Original):** A light scattering type liquid display device according to claim 17, wherein said liquid crystal composition formed a continuous layer in said light modulation layer and said transparent solid substance formed a uniform three-dimensional network in said continuous layer.

**Claim 19 (Currently amended):** A nematic liquid crystal composition comprising a liquid crystal component A composed of one kind of compound represented by a general formula selected from the general formulas (I-1) to (I-5):

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(wherein one, or two or more CH groups, which are present in a naphthalene-2,6-diyl ring, may be substituted with a N group,

one, or two or more -CH<sub>2</sub>- groups, which are present in a decahydronaphthalene-2,6-diyl ring, may be substituted with -CF<sub>2</sub>-, one, or two or more -CH<sub>2</sub>-CH<sub>2</sub>- groups, which are present in said ring, may be substituted with -CH<sub>2</sub>O-, -CH=CH-, -CH+CF-, -CF=CF-, -CH=N- or -CF=N-, one, or two or more >CH-CH<sub>2</sub>- groups, which are present in said ring, may be substituted with >CH-O-, >C=CH-, >C=CF-, >C=N- or .N-CH<sub>2</sub>-, a >CH-CH< group, which is present in the ring, may be

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substituted with >CH-CF<, >CF-CF< or >C-C<, and at least one C in said non-substituted or substituted ring may be substituted with Si;

R<sup>1</sup> each independently represents an alkyl group having 1 to 10 carbon atoms or an alkenyl group having 2 to 10 carbon atoms, said alkyl or alkenyl group can have one, or two or more F, Cl, CN, CH<sub>3</sub> or CF<sub>3</sub> as a non-substituent or substituent group, and one, or two or more CH<sub>2</sub> groups may be substituted with O, CO or COO, while O atoms do not bond with each other directly;

Q<sup>1</sup> each independently represents F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, OCF<sub>2</sub>H, OCFH<sub>2</sub>, NCS, or CN;

X<sup>1</sup> to X<sup>3</sup> X<sup>2</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN; X<sup>3</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, CN, or CH<sub>3</sub>;

W<sup>1</sup> to W<sup>6</sup> each independently represents H, F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN, and also W<sup>4</sup> each independently represents CH<sub>3</sub>, and at least one of W<sup>1</sup> to W<sup>6</sup> is F, Cl, CF<sub>3</sub>, OCF<sub>3</sub>, or CN;

K<sup>1</sup> to K<sup>5</sup> each independently represents, a single bond, -COO-, OCO-, -CH<sub>2</sub>O-, -CH=CH-, -CF=CF-, =C≡C-, -(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>4</sub>-, -CH=CH-(CH<sub>2</sub>)<sub>2</sub>-, -(CH<sub>2</sub>)<sub>2</sub>-CH=CH-, -CH=N-, =CH=N=N-CH-, , or -N(O)=N-;

~~rinds rings~~ A<sup>1</sup> to A<sup>4</sup> each independently represents 1,4-phenylene, 2- or 3-fluor-1,4-phenylene, 2,3-difluoro-1,4-phenylene, 3,5-difluoro-1,4-phenylene, 2- or 3-chloro-1,4-phenylene, 2,3-dichloro-1,4-phenylene, 3,5-dichloro-1,4-phenylene, pyrimidine-2,5-diyl, trans-1,4-cyclohexylene, trans-1,4-cyclohexenylene, trans-1,3-dioxane-2,5-diyl, trans-1-sila-1,4-cyclohexylene, trans-4-sila-1,4-cyclohexylene, naphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, or decahydronaphthalene-2,6-diyl, and naphthalene-2,6-diyl and 1,2,3,4-

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tetrahydronaphthalene-2,6-diyl can have one, or two or more F, Cl, CF<sub>3</sub> or CH<sub>3</sub> as a non-substituent or substituent group;

one, or two or more hydrogen atoms, which are present in a naphthalene-2,6-diyl ring, a 1,2,3,4-tetrahydronaphthalene-2,6-diyl ring, a decahydronaphthalene-2,6-diyl ring a side chain group R<sup>1</sup>, a polar group Q<sup>1</sup>, linking groups K<sup>1</sup> to K<sup>5</sup> and rings A<sup>1</sup> to A<sup>4</sup>, may be substituted with a deuterium atom;

k<sup>1</sup> to k<sup>8</sup> each independently represents 0 or 1, k<sup>3</sup> + k<sup>4</sup> is 0 or 1, and k<sup>5</sup> + k<sup>6</sup> + k<sup>7</sup> + k<sup>8</sup> is 0, 1 or 2; and

atoms, which constitute the compounds of the general formulas (I-1) to (I-5), may be substituted with isotope atoms thereof; 0 to 99.9% by weight of a liquid crystal component B composed of a compound having a dielectric constant anisotropy of +2 or more as a liquid crystal component excluding the compounds of the general formulas (I-1) to (I-5); and 0 to 85% by weight of a liquid crystal component C composed of a compound having a dielectric constant anisotropy within a range from -10 to +2; the sum total of said liquid crystal component B and said liquid crystal component C being within a range from 0 to 99.9% by weight.